

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1 (canceled).

2. (currently amended): The volume hologram medium according to claim ~~1~~7, wherein a hologram of said image of a plane pattern is selectively recorded in only an area corresponding to said plane pattern and as a hologram comprising parallel interference fringes in one section at an angle with respect to at least a recording plane.

3. (previously presented): The volume hologram medium according to claim 2, wherein said section includes a normal to said recording plane, said hologram of said image of a plane pattern is recorded in such an angle relation that object light and reference light are incident on said recording plane at substantially identical angles of incidence on the same side with respect to said normal and from mutually opposite directions between said recording plane is interposed, and a hologram of said image of a three-dimensional object is recorded in such an angle relation that a center light ray of said object light is substantially vertically incident on said recording plane.

4. (previously presented): The volume hologram medium according to claim 2 or 3, wherein said hologram of said image of a plane pattern is recorded by interference of object light that diffuses in only a direction crossing at right angles with said section and reference light.

5. (currently amended): The volume hologram medium according to claim ~~4~~ 17, wherein said image of a plane pattern is an image of a painted design or micro-characters.

6. (currently amended): The volume hologram medium according to claim ~~4~~ 17, wherein said image of a plane pattern is an image of an array of lines or dots.

7. (currently amended): The volume hologram medium according to claim ~~4~~ 17, wherein at least one of said image of a three-dimensional object and said image of a plane pattern is multi-recorded at two or more different wavelengths.

8. (currently amended): The volume hologram medium according to claim ~~4~~ 17, wherein a hologram photosensitive material comprises a photopolymer.

9. (canceled).

10. (currently amended): The volume hologram medium according to claim ~~9~~ 18, wherein ~~an~~ the image of a three-dimensional object is multi-recorded by interference of reference light having the same angle of incidence and wavelength as those of said reference light used for recording

said plurality of plane pattern images with object light having an angle of incidence different from that of said object light used for recording to said plurality of plane pattern images.

11. (currently amended): The volume hologram medium according to claim 9 18, wherein each hologram of said plurality of plane pattern images is selectively recorded in only an area corresponding to each plane pattern, and as a hologram comprising parallel interference fringes in one section at an angle with respect to at least a recording plane.

12. (currently amended): The volume hologram medium according to claim 9 18, wherein said plurality of plane pattern images comprise an image of the same plane pattern.

13. (previously presented): The volume hologram medium according to claim 11, wherein each hologram of said plurality of plane pattern images is recorded by interference of object light and reference light that diffuse in only a direction crossing at right angles with said section.

14. (currently amended): The volume hologram medium according to claim 9 18, wherein said plurality of plane pattern images are multi-recorded at two or more different wavelengths.

15. (original): A method for authentication of a volume hologram medium having an image of a three-dimensional object and an image of a plane pattern multi-recorded in a reflection hologram form by interference of the same reference light beams having the same angle of incidence and the same wavelength with object light beams having mutually different angles of incidence, wherein:

an image of an array of lines or dots is recorded as said image of a plane pattern, and a pattern film on which an array of lines or dots is drawn at the same pitch as that of said plane pattern comprising an array of lines or dots is brought in alignment with said volume hologram medium, so that said volume hologram medium can be authenticated with moiré fringes created between said image of a plane pattern and a plane pattern comprising an array of lines or dots on said pattern film.

16. (original): The method for authentication of a volume hologram medium according to claim 15, wherein said image of a plane pattern is recorded in such a way as to be reconstructible near to a hologram plane of said volume hologram medium.

17. (new): A volume hologram medium comprising a recorded image, the recorded image being created by interaction of a light from a stereoscopic image of a three dimensional object arising from a first input hologram, a light from a plain pattern image arising from a second input hologram and an illumination light, the light from the stereoscopic image and the plain pattern image arising from a first side of the volume hologram and the illumination light arise from a second side of the volume hologram;

the first input hologram having a first image recorded therein, the first image being created by interaction of diffraction light arising from an image located in a transmission hologram from a first side of the first input hologram and a first coherent reference light from a second side of the first input hologram,

the image in the transmission hologram being created by interaction of a second coherent reference light and a scattered light from the three dimensional object,

the second input hologram being created by interaction of an image corresponding to a masked pattern corresponding to the plane pattern and third coherent reference light passing through a diffuser,

wherein the first coherent reference light, the second coherent reference light, the third coherent reference light and the illumination light have a same wavelength and angle of incidence.

18. (new): A volume hologram medium comprising a recorded image, the recorded image being created by interaction of a light from a stereoscopic image of a three dimensional object arising a first input hologram, light from a plurality of plain pattern images arising from a second input hologram and an illumination light, the light from the stereoscopic image and the plurality of plain pattern images arising from a first side of the volume hologram and the illumination light arise from a second side of the volume hologram;

the first input hologram having a first image recorded therein, the first image being created by interaction of diffraction light arising from an image located in a transmission hologram from a first side of the first input hologram and a first coherent reference light from a second side of the first input hologram,

the image in the transmission hologram being created by interaction of a second coherent reference light and a scattered light from the three dimensional object,

the second input hologram being created by interaction of images corresponding to a masked pattern corresponding to the plurality of plane pattern images and third coherent reference light passing through a diffuser,

wherein the first coherent reference light, the second coherent reference light, the third coherent reference light and the illumination light have a same wavelength and angle of incidence.